

## **Determinants of Participation in Physical Activity among School Going Adolescents with Disabilities in Kakamega County, Kenya**

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**Abstract:** Physical activity (PA) affords a wide range of health benefits to an individual. Among adolescents with disabilities, PA participation is thought to be related to the optimal development and functioning of physical, physiological, social and psychological processes. It is also widely believed that regular physical activity participation in adolescence leads to active adulthood and reduces the risk of chronic diseases of adulthood. Even with the well documented benefits of PA, there is a decline in PA as children progress from childhood to adolescence with more decline for adolescents with disabilities. Effective intervention strategies aimed at increasing participation depends on a good understanding of determinants of PA. This study assessed social and environmental determinants of participation in PA among school going adolescents with disabilities. The study employed descriptive survey research design to seek information through questionnaires on PA participation and the social and environmental factors that influence PA participation among adolescents with disabilities. Through stratified random sampling, 200 learners (127 boys and 73 girls) were selected from special units, special and integrated primary and secondary school in Kakamega County, Kenya. Their ages ranged from 10 to 21 years with majority (43%) aged between 13 and 15 years, 79% were in special schools, 17.5% in special units and 3.5% integrated in able bodied classes. Most adolescents (31%) were active three times a week with a high number (39%) active during the school officially scheduled games time. Socially, the adolescents indicated that their participation in PA was facilitated by encouragement from friends and peers (58.5%) as compared to family (38.5%) and teachers (35%). Lack of proper facilities 58.5% and appropriate equipment (63.5%) discouraged adolescents from being active in school. Other social and environmental dimensions had little influence. Given that most adolescents did not meet the recommended 60 minutes of PA daily, it is imperative that schools need to adapt programs and provide for more structured, disability specific PA to increase PA participation. Ensuring availability, accessibility and appropriateness of facilities and equipment would be central to ensuring adolescents have the opportunity to obtain the recommended PA. There is need for increased awareness and training among family members and teachers to increase support and advocacy of PA for adolescents with disabilities.

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### **I. Introduction**

Physical Activity (PA) is widely accepted as being beneficial to the health of a person and its regular participation has become an important component of a healthy lifestyle (Oliveira & Quilnas, 2010). Participation in regular PA contributes to the health and wellbeing of an individual and reduces incidences of diabetes, hypertension, cancer, depression and osteoporosis in adults (Broj, 2009). Emerging evidence indicates that PA is beneficial to children and adolescents alike. According to Center for Disease Control and prevention (2011) & World Health Organization (2010), regular PA in children and adolescents increases strength and endurance, aids in building of healthy bones and muscles, helps in weight management and reduces anxiety and stress. Additionally, engaging adolescents with and without disabilities in PA and instilling healthy habits into their lives can promote better health outcomes (Foster, 2012) and positively influence their participation in PA throughout their lifespan (Hallal, *et al* 2006). Mahe *et al* (2014) observed that regular PA participation tend to hold important additional benefits for individuals with disabilities. While PA is beneficial to the health of a person, it is even more critical to adolescents with disabilities than those without because partly a sedentary lifestyle places them at an increased risk of preventable secondary conditions (Malon, Barlfield & Brasher, 2010). Additionally, PA participation for people with disability improves aerobic capacity, gross motor function and high levels of satisfaction for the participants and their parents (Johnson, 2009). Considering that adopting positive PA habits in adolescents with disabilities tracks to PA in adulthood (Anderssen & Wold, 1992),

adolescence is therefore an important period of developing positive lifelong PA behaviors that reduce the health outcome of physical inactivity during adolescence through to adulthood (Vu, Murrie, Gonzalez, & Jobe, 2006). Furthermore, PA, for all is one of the major indicators of healthy people 2020 (USDHHS, 2011). Despite the well-recognized benefits of regular PA and its participation being critical at adolescent stage, it has been shown that there is an alarming PA decline during adolescence, (CDC, 2010; Prins, 2012; Wachira, *et al* 2014). In particular, limited PA is greatest in adolescents with moderate to severe disabilities who face challenges of transitioning from adolescence to adulthood (Rimmer, 2008).

Studies cite a complex range of individual, social and environmental factors that determine participation of PA by adolescents (Block, Moran & Taliaferro, 2013; Bukhala 2012; Muthuri 2007). VCA 2010 indicated that individual factors such as knowledge, attitude, skills, age, sex, level of education, socio economic status among others increase or decrease the likelihood of an individual being active. On the other hand, the environment plays a key role in shaping PA among adolescents by providing cues for threats and opportunities in PA engagement. Currently Disability is not viewed as a problem within a child or youth but the consequent day to day relationship with their surrounding environment (Colver & SPARCLE Group, 2006). This may be the reason why there is growing interest in identifying the environmental factors that shape PA among youth with disabilities. In developing countries, the environment is a key modifiable factor that either promotes or hinders participation in PA. Matheri (2009) indicated that among adolescents with physical disabilities, the weather, terrain of playgrounds, safety, and facilities majorly determined PA. In order to increase PA levels of youth with disabilities so that they can experience the benefits of a physically active lifestyle, participation barriers encountered should be removed while levels of support should be increased (Block *et al*, 2013). Many independent physical activity studies (Allender, *et al* 2006; Humbert *et al.*, 2008). PA in adolescents with disability is either positively or negatively influenced by the social support and role modeling provided by significant others. Those significant others include family and care givers, peers, friends, teachers and coaches.

Understanding the determinants of physical activity is an important pre-requisite to designing effective interventions that promote PA. While a number of studies in developed countries have focused on these determinants of PA participation for able bodied adolescents (Katz, 2012; Pan, Cameron, DesMeules, Morrison, Craig & Jiang: 2009), little literature exist regarding influences of these determinants on adolescents with disabilities in developing countries like Kenya. Examining the influences of PA participation among adolescents with disabilities is important given that they stand a chance to reap greater benefits from increased PA. This research provides information on how to adapt facilities, equipment and PA programs to all teachers to be able to implement an effective PA program to boost PA levels of adolescents with physical disability in schools in order to improve their health. It will also give insights for policy makers on formulating policies on school environment that encourage PA participation among school going adolescent with disabilities.

## **II. Literature Review**

The Kenya 2014 physical activity report card of children and youth results indicated that among children and adolescents aged 5-17years old, only one half of Kenyan children and adolescents were engaging in sufficient levels of PA. More than half of Kenyan school going adolescents with disabilities neither meet the WHO recommended guidelines of 60 minutes daily of moderate to vigorous physical (MVPA) activity daily (Matheri, 2009). Prins (2012) using inquiries of studies further showed that, inactivity among Netherlands' adolescent girls was highly prevalent. Only one out of four adolescents was found to meet the 30 minutes of MVPA three times daily as prescribed by the Netherlands' PA guidelines.

### **2.1 Determinants of physical activity participation**

Determinants of PA participation include modifiable factors which are either intrinsic or extrinsic to an individual that impose a direct influence on the opportunity to engage in physical activity. Regular participation in physical activity among children and adolescents is related to demographic, personal, social, and environmental factors (CDC, 2011d). Keiko, Annette, Majnemer, Law, & Lach, (2008) states that knowledge of intrinsic (related to the child) and extrinsic (related to the environment) factors that promote participation among children and youth with physical disabilities would enable therapists to expand interventions and include health promotion strategies that enhance PA participation and integration.

#### **2.1.1 Individual factors**

Intrinsic factors such as Disability, age and gender may collectively affect participation in PA. Motor function and greater limitations are associated with less participation. It has been noted that persons with physical disabilities find movement stressful and are likely to remain sedentary unless support systems are put in place to ease their movement (Bukhala, 2012). Similarly, increasing age is related to decreasing level of participation in leisure, particularly with respect to informal activities (Law *et al.*, 2006). Age is the dominant biological determinant of physical activity. Overall, levels of activity steadily decline from about 6 years of age

until adolescence, when activity levels drop more steeply. Gender is likely to influence choice of activities. Studies on children with and without disabilities demonstrate that girls tend to participate less in physical activities and sports as compared to boys (Wachira et al 2014).

### **2.1.2 Physical environment**

Participation in PA can be facilitated or complicated by environmental factors and environmental barriers directly affect participation in leisure because they may limit access to activities and spaces (Shikako et al, 2008). Possibly, these restrictions are responsible for the extent to which these children prefer informal rather than formal activities because the latter are more likely to be impeded by physical and institutional barriers (Majnemer, 2006 & Shannon, 2006). Perhaps for this reason, there is growing interest in identifying the environmental factors that may act either as barriers or as facilitators to participation in PA. Engagement of participants with disability in community sports and recreation programmes typically require money, transportation and specialized equipment (mulligan et al, 2012). Physical environment therefore provides cues and opportunities for physical activity and includes both natural (such as climate, weather, elevations and scenery) and built environments (buildings, availability of facilities, runways, workplaces, homes, access, convenience, safety, and urban planning and design) factors (Brochado, Brochado & Brito, 2010). Heah et al (2007) notes that physical restrictions such as transportation and physical barriers (e.g., uneven surfaces, stairs) greatly impede the full participation by children and youth with disabilities in various leisure activities. Matheri (2009) study among adolescents with physical disabilities aged 14-21 years (n=237) explored barriers and facilitators of PA among physically challenged adolescents from the coastal and central regions of Kenya. The findings showed that environmental barriers in physical activity engagement were uneven play grounds (41.4%), having a disability (36.4%) and lack of clothes/equipment (35.1%). Equipment and facilities used by adolescents with disabilities can be specifically designed for the type of disability or adapted from the existing ones to allow an individual engage in PA that is not possible with normal provision. In another study by Prins (2012) using an inquiry of studies found out that inactivity among Netherlands' adolescent girls was highly prevalent. Only one out of four adolescents was found to meet the 30 minutes of MVPA three times daily, Netherlands' PA guidelines. He indicated that environmental factors played a big role in determining the PA patterns. The study showed that adolescent girls attending lower education levels from non-western descent were likely to participate in PA. An individual's background, and perceived neighborhood safety were among the factors that greatly influenced engagement in sports.

### **2.1.3 Social environment.**

Studies show existence of positive association between physical activity behavior and social support from family, friends, peers and program staff in supervised settings (Trost *et al.*, 2002). The preferred type of social support varies according to gender and age group (Brochado et al, 2010). Castillo and Esther (2011) observed in a study involving 12-18years (n=93) urban communities in 10 states in United States that, adolescents improved PA participation were found to be the belief that they could participate more in PA if they got someone who they could provide support. Some of the people were families, friends, general and adapted PE teachers and health providers. Attitudes toward children or youth with physical disabilities constitute an important barrier for participation in leisure activities. Specifically, bullying by peers, need for adult assistance, staring by others, policy segregation, segregation within schools, and lack of information are dominant factors within the attitudinal and social environment that have been identified as negatively influencing participation in leisure for children with Cerebral Palsy (Mihaylov, Jarvis, Colver, & Beresford, 2004). Negative reactions of others may explain why children and youth with physical disabilities may prefer segregated environments for leisure activities so as to avoid physical and attitudinal obstacles in the community at large, and thus participate more easily (Heah et al., 2007). The social environment therefore is an important factor to consider in providing opportunities that encourage adolescents with disabilities to be physically active.

## **III. Results**

The study used questionnaires to collect data from school going adolescents with disabilities. A total of 200 (84.8%) questionnaires were issued to adolescents. Data was collected from 58 (29%) physically challenged, 88 (44%) with hearing impairment and 54 (27%) visually impaired respondents.

### **3.1 Demographic characteristic of respondents**

The quantitative data collected was related to age, education, type of school the respondent is attending, type of the respondent's disability and gender. The quantitative data was then presented in the form of tables, charts, graphs and numerical summary as shown table 1;

**Table 1: Demographic characteristic of the respondents**

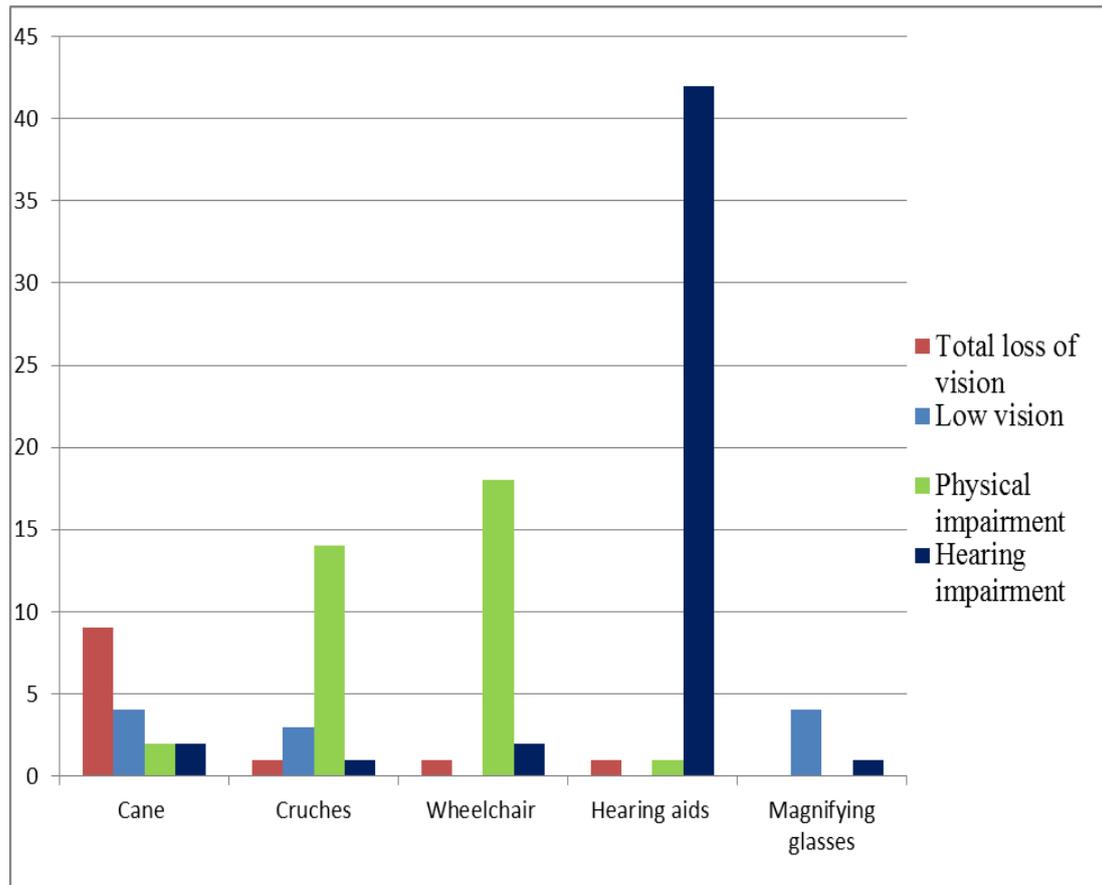
Variable		Gender		Total
		Female	Male	
Age	10-12	19 (42.2%)	26 (57.8%)	45
	13-15	36 (42.4%)	49 (57.6%)	85
	16-18	17 (30.4%)	39 (69.6%)	56
	19-21	1 (7.1%)	13 (92.8%)	14
Class/form	ECD- Class 2	3 (33.3%)	6 (66.7%)	9
	Class 3- Class 5	18 (45%)	22(55%)	40
	Class 6- Class 8	52 (41.6%)	73 (58.4%)	125
	Form 1- Form 4	26(100)	0	26
Type of school	Public	73 (36.4%)	127 (63.5%)	200
	Private	0	0	0
School category	Special school	56 (35.4%)	102 (64.5%)	158
	Special unit	12 (34.2%)	23 (65.7%)	35
	Integrated school	5 (71.4%)	2 (28.6%)	7
What type of disability do you have	Low vision	7 (21.9%)	25 (78.1%)	32
	Total loss of vision	2 (11.8%)	15(88.2%)	17
	Physically challenged	34 (51.5%)	32(48.5%)	66
	Hearing impairment	30 (35.3%)	55 (64.7%)	85

The analysis showed that majority of the respondents were between the ages of 13-15 years with boys being 36 (42.4%) and girls being 49 (57.6%) of the total respondents within mid adolescence stage. The analysis also shows that there are more girls at 13 (92.8%) than boys who are at 1 (7.1%) between the ages 19-21 years. Additionally the highest type of disability among the sampled was those with hearing impairment with 55(64.7%) in boys and 30(35.3%) in girls. It is also clear from the analysis that all the respondents with disabilities are in public schools. The analysis also shows that there are more respondents between class 6-8 and majority of them are placed in special schools 158(79%) followed by special units (17.7%) and a minority integrated within schools and classes dealing with typically developing learners (3.5%). The analysis shows that 53% of the respondents do not use any assistive device in the day to day activities while 47% use different types of assistive devices as shown in figure 1;

From figure 1, Physical impairment had the highest number of those who were using assistive devices and the device used was hearing impairment. These were followed closely by respondent who were using wheelchair and crutches. The visually impaired used both cane and magnifying glasses more than other disabilities. A number of respondents used a variety of assistive devices due to multiple disabilities.

The research also showed that majority of the respondents required assistance in order to participate in games and walking. The boys indicated that they needed more assistance in participating in games while the girls needed more assistance in meal preparation. The analysis also showed that both gender required little assistance in eating while a few respondents did not require any assistance at all as shown in figure 2;

The research also sought to find out the types, time and number of days engaged in PA by the respondents. The results are as shown in Table 2. From the analysis, majority of the respondents 126 (63%) participated in ball games followed by athletics at 44 (22%). It is also noted from the analysis that only 30 (15%) of the respondents participated in recreational activities. The analysis also showed that there were more boys participating in physical activity than girls with the majority of the respondents 77 (39%) participating in physical activity during games time followed by 64 (32%) respondents who participated during physical education lesson. The analysis also showed that few respondents 7(3%) participated in interclass activities. The results showed that majority of the respondents 61 (31%) participated three times and 41 (21%) five times in PA per week.



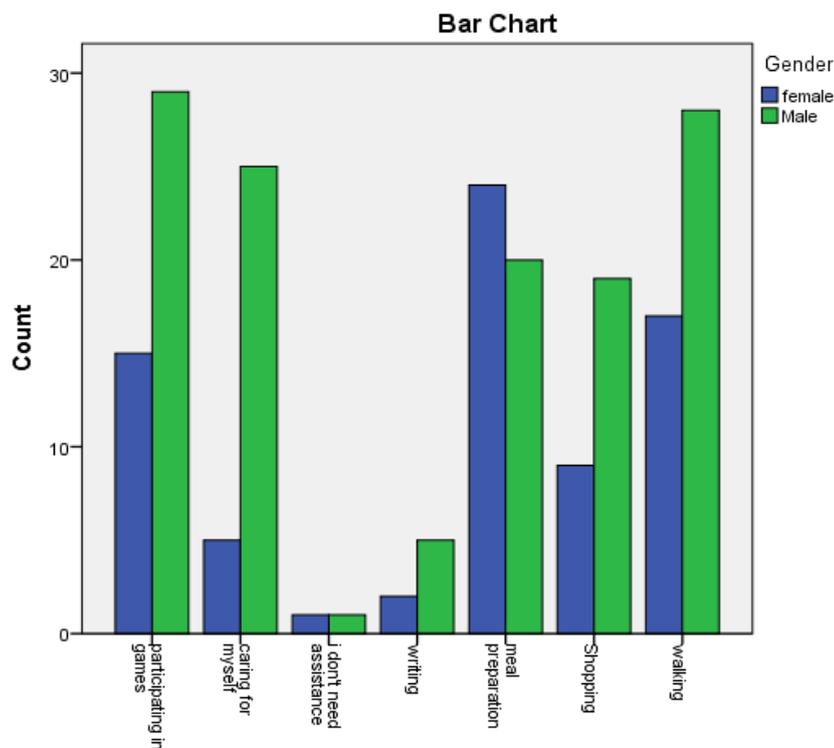
**Figure 1:** Assistive Device Used For Each Type of Impairment

The research also sought to find out the individual factors that influence physical activity as shown in the Likert scale in Table 3. From the likert scale, 135(67.5%) respondents scored 1 and 2 points, indicating that PA participation prevents diseases such as cancer therefore it is important and this showed respondents had knowledge on the importance of PA. It was also noted that few respondents 22(11%) felt they didn't have confidence in participation while 152(76%) of the respondent felt they had confidence in participation in physical activity. The results also showed that majority of the respondents 152 (79%) believed that through participation in PA, they had learned new skills which benefitted them. It is also evident from the Likert scale that through participation in games the respondents could manage their body weight, this is evident from the majority of the respondents 136(68%) of the respondents who agreed. Results from the Likert scale also showed that only few respondents 46(23%) felt that they had energy to sustain them in physical activity. Additionally, 143 (68%) of the respondents indicated that they feared that they could be hurt when they participate in physical activities. Lastly, it was evident from the likert scale that a fraction of the respondents 128(54%) felt that they had time for exercise.

The research also sought to find out the environmental factors influencing physical activity as shown in Table 4. From the Liker scale, 116 (58%) respondents scored 3 and 4 points, indicating that the terrain at school and outside school is not safe for participation in physical activity. The results also showed that majority of the respondents 117 (58.5%) felt that there were no proper facilities for physical activity. When asked whether they had the right equipment for physical facility, majority of the respondents 127(63.5%) reported that did not have the right equipment for physical activity. The researcher also sought to find out whether the respondents were able to access the facilities for physical activity. From the results 119 (60%) of the respondents noted that they could not easily access the PA facilities. It is also evident from the Likert scale results that 136(68%) of the respondents did not have adequate equipment for physical activity.

The research also sought to find out the social factors influencing physical activity as shown in Table 5; from the likert scale, 131(65.5%) respondents scored option 1 and 2, indicating that they didn't feel embarrassed when they participate in physical activity participation while 123(61.5%) of the respondents disagrees that they were supported by their family to participate in physical activity. The researcher also sought to find out whether the respondents are encouraged by their teachers and friends when they participate in physical activity. From the results, only 35% of the respondents agreed that they are encouraged by their teachers to be active. However,

123(58.5%) agrees that they are encouraged by friends and peers to participate in physical activity with 81.5% agreeing that they enjoy and have fun when they participate in physical activity with their peers.



**FIGURE 2: ASSISTANCE REQUIRED**

**Table 2: Physical Activity**

Variable		Gender		Total
		female	Male	
PA type involved in respondents	Ball games	52	74	126 (63%)
	Athletics	15	29	44 (22%)
	Recreation activity	6	24	30 (15%)
Time at school participating in physical activity	Physical Education Classes	27	37	64 (32%)
	Games time	25	52	77(39%)
	Interclass competition	2	5	7 (3%)
	Interschool competition	5	8	13 (6%)
	Breaks/Lunch time	14	25	39 (20%)
Number of times participating in PA per week	Once	11	17	28 (14%)
	Two times	8	17	25 (12%)
	Three times	21	40	61 (31%)
	Four times	4	11	15 (7%)
	five times	12	29	41 (21%)
	six times	17	13	30 (15%)

**Table 3: Individual factors influencing physical activity**

Variables	SA[1]		A[2]		UN[3]		D[4]		SD[5]	
	f	%	f	%	f	%	f	%	f	%
Physical activity prevents diseases such as cancer	58	29	77	38.5	21	10.5	15	7.5	29	14.5
I feel confidence about participation	102	51.0	50	25.0	26	13.0	16	8.0	6	3.0
I learn and gain skills	87	43.5	72	36.0	21	10.5	9	4.5	11	5.5
I manage my body weight	66	33.0	70	35.0	19	9.5	31	15.5	14	7.0
I have energy to sustain me in the physical activity	66	33.0	65	32.5	23	11.5	37	18.5	9	4.5
I don't fear to be hurt	15	7.5	39	19.5	10	5.0	66	33.0	70	35.0
I get time to exercise	58	29.0	70	35.0	24	12.0	32	16.0	16	8.0

**Table 4:** Environmental factors influencing physical activity

Variable	SA[1]		A[2]		UN[3]		D[4]		SD[5]	
	f	%	f	%	f	%	f	%	f	%
The terrain is safe for me	43	21.5	38	19.0	3	1.5	78	39.0	38	19.0
Proper facilities are available	24	12.0	38	19.0	21	10.5	71	35.5	46	23.0
The right equipment is available	26	13.0	39	19.5	8	4.0	94	47.0	33	16.5
Access the facility	25	12.5	44	22.0	12	6.0	69	34.5	50	25.0
Equipment is enough	20	10.0	34	17.0	10	5.0	68	34.0	68	34.0

**Table 5:** Social factors influencing physical activity

Variable	SA[1]		A[2]		UN[3]		D[4]		D[5]	
	f	%	f	%	f	%	f	%	f	%
My family supports me	26	13.0	35	17.5	8	4.0	74	37.0	57	28.5
I don't feel embarrassed	87	43.5	36	18.0	11	5.5	25	12.5	41	20.5
My teachers encouragement	7	12.0	46	23.0	26	13.0	102	51.0	12	6.0
I enjoy to have fun	88	44.0	75	37.5	17	8.5	9	4.5	17	8.5
I get encouragement from friends	50	25.0	73	36.5	36	18.0	29	14.5	12	6.0

#### IV. Discussions

##### 4.1 Adolescents with Hearing, Physical and Visual Impairment.

The current study showed that school going adolescents with disabilities were diverse in ages with a majority being at mid adolescence stage. There were more boys than girls at school but more girls at late adolescence stage than boys. Evident from past research, this study's results reveals that girls, especially those with disabilities join school at a later stage as compared to boys. Cultural beliefs and fear for safety by parents contribute to this. In Kenya there are both private and public schools that cater for able bodied adolescents. However results from the study revealed that only public school (government sponsored) in Kakamega County serve adolescents with disabilities. Special school housed the biggest population of pupils with disabilities compared to very few learners who were in the integrated system with able bodied learners. The highest type of disability among the sampled was those with hearing impairment with 55 (64.7%) in boys and 30 (35.3%) in girls. Physical disability among girls was the most dominant disability 34 (51.2%).

##### 4.2 Physical Activity among Adolescents

PA is important for physical, psychological and physiological health as well as maintenance of physical function and independence of young people with physical disability (Maher 2014). PA among adolescents with disabilities however remains low despite the well documented benefits. Results from the questionnaire in current study revealed that only 31% of boys and 21% of girls the respondents considered themselves to accumulate 60minutes of MVPA three times and five times a week respectively. WHO (2010) recommends that for children and adolescents with and without disabilities to enjoy benefits accrued from PA, they should engage in MVPA at least 60minutes daily. More PA leads to more benefits. The current findings concur with other studies that a good number of adolescents with disabilities in Kenya do not meet the physical activity recommendations (Matheri, 2009). One of the reasons for the decline of PA among adolescents may be because PA in childhood is viewed as casual contrary to the onset of adolescence where PA is considered as being more structured. Further, there were differences in participation patterns among boys and girls. Studies have shown that differences in PA engagement between genders emerge at adolescent stage with more boys than girls being active than boys. Though PA participation decrease with age, males are considerably more likely to be active than females (Berger et al, 2008 & Trost 2005). Similar to these findings, the current study reported that boys were active in more days of the week as compared to girls. Department of Health and children (2007) highlighted gender differences between boys (63%) and girls (43%) on exercising four or more times a week among Irish adolescents. This varying degree of gender in participation of PA has also been supported by Doyle. W (2010) who indicated that among Irish adolescents, 89% of boys and 73% of girls displayed that they were highly involved in PA. Results from the current study show that majority of the respondents 77 (39%) participate in physical activity during games time followed by 64 (32%) respondents who participate during physical education lesson. The analysis also shows that a minority respondents 7(3%) participate in interclasses and interschool competitions. As compared to PE and games time, only 20% of both girls and boys were active during lesson breaks and lunch break. These result is consistent to a research that was done by Ridger N (2011) which indicated that there was significant decrease of PA in recess lunch time as compared to other PA scheduled time. Both boys and girls prefer to sit around and chat with their friends.

#### **4.2.1 Social Determinants**

Social determinants are defined as 'modifiable factors in the physical and social environment that impose a direct influence on the opportunity to engage in physical activity. A person's creation of disability is not only a matter of a characteristic of the person but more on the interaction between the person and social environment (Cavallo, 2014 and Preskitt et al, 2013). They further note that social support is a predictor of PA in the general population and probably an equal or even more modifiable predictor of PA among adolescents with disabilities. Social support may be provided in the form of reminders of personal accomplishments, verbal encouragement, or learning from others' experiences, significant others can encourage adolescent with disabilities to try new ways of participating in PA, or help them understand their disability to suit in appropriate PA. On the other hand, it would be futile to tackle personal, motivational and emotional barriers in improving PA if social barriers are not dealt with. The negative effects of a disability can be reduced and the disabling situation limited by persons within the social environment. According to the findings of this study 131(65.5%) respondents indicated that they don't feel embarrassed when they participate in physical activity participation .77(38.5%) of the respondents agreed that they were active because of the encouragement from family members. This result concurs with a study carried out on adolescents aged between 10 and 19 years (n=98) where majority of the participants indicated that in improving PA engagement family and community support was vital (Nilooofar et al, 2015). Parents and significant others are fundamental in organizing and supporting PA involvement of children and adolescents (Reudsepp 2006), support and encouragement from parents facilitate PA in adolescents and the effectiveness of an intervention (Bruntol, 2005). However the results were contrary to a research by Matheri (2007) where adolescents indicated that lack of assistance and encouragement from family members' were unlikely perceived barriers in activity participation. The researcher also sought to find out whether the respondents are encouraged by their teachers and friends in participation of physical activity. From the results, 72(36.0%) of the respondents agreed that they were encouraged by their teachers to be active. Teachers can improve the social development of youth with disabilities through the quality of support offered (Bouvard, 2007). More specifically, teachers must first ensure proper understanding of the disability, adapt the learning activities to the disability, and offer moral support (Junker & Carlberg, 2011; Saebu, 2010), recognizing students' disabilities helps teachers better understand how to support their participation. A study conducted for adolescents aged 12-18years (n=93) drawn from 10 urban communities in 10 states of united states of America identified that determinants that either hindered or promoted participation were the belief by respondents that they could get someone to participate with or provide support in PA such as general and adapted PE teachers (Ortiz and Esther, 2011). As regards to peer support, 123(58.5%) of the subjects agreed that they participated in physical activity because they were encouraged by their peers to be involved. Similar results of related studies show that most of the teens agree that that peers play an important role in PA involvement (Nilooofar et al, 2015). Positive image on participation in PA among peers in adolescence is important especially when encouraged by the school mates and their peers. This may explain why majority of the respondents 163 (81.5%) agrees that they enjoy and have fun when they participate in physical activity. At puberty, adolescents seem to be comfortable when they are around their peers and engage in similar activities.

#### **4.2.2 Environmental determinants.**

PA can be facilitated or complicated by environmental factors hence understanding environmental factors that enhance or restrict physical activity for adolescents with disabilities is vital in developing effective intervention strategies (Wilson and Dollman 2007). Cavallo et al., 2014; Preskitt et al., 2013 indicates that disabilities is not only a characteristic of an individual but also the interaction with physical environment at a given time. Hence the growing interest in identifying environmental factors that encourage or inhibit participation in physical activities. Investigations to identify barriers to engaging in physical activity has been variously researched to inform the design of strategies that might increase access to PA opportunities. Matheri (2007) conducted a cross sectional study three counties, Kenya. He found out that most of the barriers to PA participation were found in physical lack of transport to exercise places or uneven grounds and social environment i.e. lack of time and need to rest during spare time. He concluded that for successful inactivity reduction for adolescents with physical disabilities there is need to provide PE counseling, provide right equipment, create space and make physical environment accessible and provide efficient transport as well. In a study conducted among adolescents with physical disabilities aged 14-21 years (n=237), indicated that among the major environmental barriers in physical activity engagement was uneven play grounds (41.4%), having a disability (35.4%), lack of time (36.4%), lack of clothes/equipment (35.1%). Equipment and facilities used by adolescents with disabilities can be specifically designed for the type of disability or adapted from the existing ones to allow an individual engage in PA that is not possible with normal provision. Schools have been viewed as true incubators of healthy lifestyle. They can instill good PA habits, especially in young people with disabilities (De, Small & Baur, 2008). Though policies and regulations affect participation in recreational and competitive physical activity (Badia & al, 2013; Shikako-Thomas et al. ,2008), equipment and infrastructures

play a significant role. An interview with teachers in a study illustrated that PA participation faced difficulties due to lack of equipment and inadequate infrastructures (Emilie 2016). As a result the personalized approach for students with disabilities is interfered with, time is wasted and motor engagement for the student is reduced which reduces the benefits. The current study showed that most of equipment like right goal balls, playing kit, right wheelchairs for racing, recommended seat for athletic field events, net for sitting volleyball, were either unavailable or existed in deplorable states in the schools. Additionally, most of the facilities were not adapted to fit the needs of the adolescents for ease of participation. It was noted that visually impaired adolescents' could play soccer in a normal adult field, leading to tiring easily and dropping out of participation. Participants with School based sport and physical activity provides the most opportunity for adolescents with disabilities to participate in physical activity (Salmon et al. 2004), schools, provision of the equipment and facilities needed would promote PA participation. Therefore, overall, despite shortage of literature on researches done in Africa and other developing countries this study is consistent with other research findings in and outside Africa that found out that activity participation among adolescents can either be facilitated or inhibited infrastructure of facilities and availability of equipment. The results of the regression analysis from the study indicated that perceived environmental factors influenced the participation in physical activity among adolescents with disabilities. These findings may imply that adolescents' perceptions of opportunities to be active are shaped by facilities and equipment provided within the school environment. Environmental barriers directly affect participation in PA, they may limit access to activities and spaces while facilitators increase opportunities for participation. They can instill good PA habits, especially in young people with disabilities (De, Small & Baur, 2008).

## V. Conclusion

Physical activity for all is a crucial indicator for healthy people. Regular participation in young people with disabilities enhances physical function, increases independency and boosts chances of living long by minimizing the effects of secondary conditions associated with disabilities, major causes of disease and death related to sedentary lifestyle. Inactivity is now identified as the fourth leading risk factor of global mortality (WHO, 2010). Additionally, research also shows that disability and disabling factors continue to burden the youth worldwide. PA is a simple practical strategy that can be used to enhance functionality and improve health among adolescents with disabilities. Research findings clearly indicate that a majority of adolescents with and without disabilities do not meet the required time spent in PA. Lack of participation in PA among adolescents with disabilities can lead to long term and secondary health challenges. A better understanding of factors that influence participation at this crucial stage, can encourage and improve participation. Adolescents spend most of their wake time in school, therefore findings on facilitators and barriers of PA participation at school will improve intervention to the problem of inactivity together with possible way of preventing or limiting sedentary lifestyle among youth with disability. Engagement in PA has a relationship with demographic, personal, social and environmental factors. Physical Educations, games and sports are the main elements of preventive health provided for in the primary and secondary school curriculums to enhance PA. There is need for keen scheduling and implementation of this provision with use of adapted activities, equipment, facilities to suit and encourage involvement. This can lead to achievement of the objectives. The study results indicate that lack of adequate and proper facilities/equipment and poor PE, games and sports implementation limits PA opportunities. Overemphasis on academic performance makes PE classes and scheduled games time easily converted to teaching of other examinable subjects. Additionally, schools do not provide sufficient opportunities for adolescents with disabilities to participation in competitive sports and increase chances of accomplishing appropriate levels of PA as recommended. Zonal to national Special school sports competition are all held within a week, once a year in first term. These leave the rest of the year without competitions that may discourage activities. Evident from the study only a small percentage of students were active during interschool competitions compared to PE lessons and games time.

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